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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/483,167	01/14/2000	Ronald Bjorklund	838	8032
23720	7590	04/02/2004	EXAMINER	
WILLIAMS, MORGAN & AMERSON, P.C. 10333 RICHMOND, SUITE 1100 HOUSTON, TX 77042			YANG, CLARA I	
		ART UNIT		PAPER NUMBER
		2635		
DATE MAILED: 04/02/2004				

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Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	09/483,167	BJORKLUND ET AL.
	<b>Examiner</b>	<b>Art Unit</b>
	Clara Yang	2635

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1) Responsive to communication(s) filed on 23 January 2004.

2a) This action is **FINAL**.                                   2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4) Claim(s) 34 - 58 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) 35 and 36 is/are allowed.

6) Claim(s) \_\_\_\_\_ is/are rejected.

7) Claim(s) 49,50,56 and 57 is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All    b) Some \* c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) Notice of References Cited (PTO-892)

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.

4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.

5) Notice of Informal Patent Application (PTO-152)

6) Other: \_\_\_\_\_.

## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments filed on 23 January 2004 with respect to claims 34 and 37 - 58 have been fully considered but they are not persuasive.

On page 13, the applicant argues "Mahany does not disclose a first-tier base station that is coupled to a first second-tier base station, which is further coupled to another second-tier base station to control a remote unit." As support for the argument, the applicant states on page 15 that the various terminals 4605, 4607, 4609, 4611, and 4617 illustrated in Figs. 46a and 46b are all first-tier base stations, not second-tier base stations, because "Mahany makes it clear that Figures 46a and 46b describe a premises LAN, and not a peripheral LAN." Claim 34, however, fails to limit first-tier base stations to base stations that support premises LANs and to limit second-tier base stations to base stations that support peripheral LANs. As called for in Claim 34, a second-tier base station is a base station that is intermediate a first-tier base station and either another second-tier base station or a remote unit.

### *Allowable Subject Matter*

2. Claims 35 and 36 are allowed.
3. Claims 49, 50, 56, and 57 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### *Claim Rejections - 35 USC § 112*

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the

art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 53, 54, and 58 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The new claims call for a second second-tier base station that transmits a synchronization interval to the remote unit in response to receiving a message from the remote unit. However, on pages 2 – 3 in the amendment to the specification filed on 23 January 2004, the applicant only teaches that a station RADPAD (i.e., a remote unit) receives an associate command from a base (i.e., a second second-tier base station), waits for a synchronization signal or beacon from the base, and sends an associate request to the base upon receiving a beacon. In turn, the base sends an associate response to the station in order to acknowledge the station's associate request.

*Claim Rejections - 35 USC § 102*

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 34, 37 - 43, 45 - 48, 51 – 55, and 58 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,790,536 (Mahany et al.).

Referring to Claims 34, 42, 46, 47, and 55, Mahany teaches a multi-tier system, as shown in Figs. 28A – 28C, comprising: (a) host 3011 adapted to control a remote unit, such as printer

3013 or code reader 3009, through a control signal (see Col. 43, lines 27 - 31); (b) access points 3015 and 3017 or first-tier base stations for providing access to a hard-wired backbone LAN 3019 and for receiving a control signal from host 3011 (see Col. 43, lines 62 - 67); (c) computer terminal 3007 (i.e., "first second-tier base station") adapted to receive the control signal from access points 3015 and 3017 via frequency hopping (see Col. 37, lines 7 - 13; Col. 40, lines 32 - 35, 44 - 48, and 61 - 65; Col. 44, lines 55 - 63; and Col. 45, lines 2 - 8); and (d) storage terminal 3031 (i.e., "second second-tier base station") that communicates with computer terminal 3007 and printer 3013 using a narrowband, single frequency protocol and has a short transmission range relative to that of access points 3015 and 3017 (see Col. 37, lines 14 - 23; Col. 40, lines 66 - 67; Col. 44, lines 13 - 15, 26- 311, and 49 - 54; Col. 45, lines 50 - 54; and Col. 46, lines 11 - 14). Because storage terminal 3031 is also able to communicate with access points 3015 and 3017 via frequency hopping, it is understood that storage terminal 3031 is able to function as a first second-tier base station and that computer terminal 3007 is able to function as a second second-tier base station.

Regarding Claim 37, because Mahany discloses that when a plurality of second-tier base stations communicate with each other or with other remote units, either one second-tier base station becomes a dedicated "control point" or the control point function is distributed among some or all of the devices (see Col. 38, lines 33 - 43), it is understood that storage terminal 3031, when it is a second second-tier base station, functions as a control point. Per Mahany, a control point performs the following tasks: (a) buffering data intended for a remote unit if the remote unit is asleep (see Col. 17, lines 34 - 39 and Col. 18, lines 43 - 46); and (b) indicating or announcing the presence of buffered data to the remote unit at regular, predetermined intervals until the remote unit retrieves the buffered data from the control point (see Col. 31, lines 14 - 18;

Col. 35, lines 45 – 53; and Col. 41, lines 15 – 28). Mahany teaches that a control point periodically transmits a Request for Poll (RFP), which informs the remote units that there are messages for them in the queue (see Col. 17, lines 28 – 39). When sleeping remote units receive their address in the RFP, the remote units transmit a poll in order to receive the buffered message from the control point (see Figs. 7b, 20a and 20b; and Col. 19, lines 50 - 65). Mahany adds that power managed remote devices employ sleep algorithms synchronized to wake for the minimum period necessary to guarantee receipt of pending message transmission (see Col. 31, lines 14 – 18).

Regarding Claims 38 and 39, Mahany imparts that peripheral or terminal devices include a data collection device that is a bar code reader 3009 (see Fig. 28a; Col. 10, lines 34 – 36; and Col. 43, lines 19 - 25).

Regarding Claims 40 and 41, Mahany's peripheral or terminal devices (i.e., "remote units") comprise a printer 3013 (see Fig. 28a; Col. 10, lines 31 – 36; and Col. 43, lines 27 - 31), a hand-held computer terminal 3007 (see Fig. 28a; Col. 9, lines 27 – 29; and Col. 43, lines 22 - 25), or a radio terminal (see Col. 63, line 31), which is understood that the radio terminal can be a pager.

Regarding Claim 43, Mahany shows in Fig. 1c that host computer 55 and first-tier base stations 56, 57, 58, and 59 form a premises local area network (LAN) (see Col. 11, lines 39 – 44). Mahany further teaches that first-tier base stations, such as first-tier base station 59, can be wirelessly connected to the LAN (see Col. 11, lines 45 – 49). Furthermore, in Fig. 28a, Mahany imparts that hard-wired backbone LAN 3019 and access point 3015 and 3017 form a premises LAN (see Col. 43, lines 62 – 64).

Regarding Claims 45 and 48, Mahany discloses that in an alternate configuration, a second-tier access point 3021 is connected indirectly to backbone LAN 3019 via first-tier access points 3015 and 3017 (see Col. 45, lines 17 - 21). Per Mahany, access point 3021 is also able to communicate with other peripheral LAN devices, such as computer terminal 3007, printer 3013, modem 3023, code reader 3009, and storage terminal 3031 (see Col. 44, lines 32 - 63 and Col. 45, lines 21 - 24). In the embodiment with access point 3021, it is understood that access point 3021 is a first second-tier base station, that computer terminal 3007 is a second second-tier base station, and that storage terminal 3031 is a third second-tier base station and is in communication with printer 3013 (see Col. 46, lines 11- 14).

Regarding Claims 51 and 52, Mahany teaches all the limitations as explained above in Claims 34, 47, and 55.

Regarding Claims 53, 54, and 58, Mahany teaches a binding or associating process between a control point (i.e., a second second-tier base station as explained above in Claim 37) and remote units. Per Mahany, a control point begins the process by transmitting a request (i.e., "associate command") to form a spontaneous LAN with a specific remote unit or with a specific type of remote unit (see Col. 37, lines 40 - 50). If a compatible remote unit is within range, the remote unit responds to the request, causing the binding process to begin (see Col. 37, lines 50 - 60). During the binding process, the control device transmits access intervals of known duration on a series of four frequencies spread throughout the available frequency range (see Col. 41, lines 45 - 50). The access interval includes a synchronization (SYNC) message (see Col. 37, lines 27 - 31). Once a control point and a remote unit are able to establish communication, the remote unit registers with the control point (see Col. 41, lines 59 - 62). During registration, the remote unit communicates a message containing an alias/identifier that identifies the

remote unit, and the control unit assigns a local address to the remote unit (see Col. 39, lines 21 - 24).

*Claim Rejections - 35 USC § 103*

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claim 44 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,790,536 (Mahany et al.) as applied to claim 34 above, and further in view of U.S. Patent No. 5,673,252 (Johnson et al.).

Regarding Claim 44, Mahany fails to expressly teach connecting a second-tier base station to a first-tier base station through a serial port.

In an analogous art, Johnson's multi-tier communication system includes: (a) a first-tier base station, or intermediate data terminal (IDT), that has a first radio transceiver operating in accordance with a first communication protocol and is connected to a local area network (LAN)

(see Fig. 1, IDT 114; and Col. 22, lines 41 – 45 and 56 - 57); (b) a second-tier base station, or remote cell node (RCN), that comprises a second radio transceiver operating in accordance with a second communication protocol independent of the first communication protocol and is connected to the first-tier base station (see Fig. 1, RCN 112; Col. 11, lines 46 – 49; and Col. 18, lines 17 - 20); (c) a first-tier remote unit wirelessly connected to the first-tier base station (IDT) through the first radio transceiver (see Fig. 1, special and Col. 6, lines 23 - 28); and (d) a second-tier remote unit, or network service module (NSM), wirelessly connected to the second-tier base station (RCN) through the second radio transceiver (see Col. 5, lines 47 - 52). Because Johnson's multi-tier system for digital radio packet communication is a wide area communications network, it is understood that the central data terminal (CDT) is connected to a wide area network (WAN) and that the IDTs are connected to a LAN. Johnson's second-tier remote unit (or NSM) comprises a vending machine (see Col. 10, lines 6 – 9). Because Johnson imparts that the IDT and RCN can be connected via cable (see Col. 18, lines 65 – 67), it is understood that the RCN is connected to the IDT through a serial port.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Mahany's multi-tier system as taught by Johnson because connecting the first-tier and second-tier base station through a serial port eliminates transmission errors cause by radio frequency (RF) interference, thereby improving system reliability.

### ***Conclusion***

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Clara Yang whose telephone number is (703) 305-4086. The examiner can normally be reached on 8:30 AM - 7:00 PM, Monday - Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Horabik can be reached on (703) 305-4704. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CY  
24 March 2004

MICHAEL HORABIK  
SUPERVISORY PATENT EXAMINER  
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